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B P I S A E

RESEARCH ACTIVITIES

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PLANT INDUSTRY STATION, BELTSVILLE, MD.

DECEMBER 1949

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Weed Control Research in Separate Division

A division for investigations in weed control is being established in the Bureau, and Dr. Roy L. Lovvorn, Raleigh, N. C., has been selected to head it. Announcing the new division December 7, in a speech before the North Central Weed Conference at Sioux Falls, S. Dak., Dr. Robert M. Salter, chief of the Bureau, said:

"Weed problems of all crops will be integrated under the direction of this unit. None will be neglected in so far as funds permit. All work on weed research in the Bureau, regardless of crops involved and including weed control machinery, will be coordinated by the head of the new division. Reorganization does not mean any immediate marked expansion in resources. It does emphasize, however, that the importance and scope of weed research has progressed to a point where the interests of the program can now be handled most satisfactorily through a responsible organization on a par in all respects with other units handling functions similar in degree of importance."

Dr. Lovvorn is well known to agricultural research workers for his leadership in research on pasture management in North Carolina. He is a native of Alabama and holds degrees from Alabama Polytechnic Institute, the University of Missouri, and the University of Wisconsin. For the past five years he has been responsible for the supervision and direction of the cooperative pasture management investigations between this Bureau and the North Carolina Station. He is well experienced in Federal-State cooperative research. He has carried out one of the best pasture management research programs in the United States. He has achieved excellent results in training men in scientific research. This is a good background for administering research and developing staff relationships.

The Bureau's work in weed control investigations is being strengthened at two points in the field: In New Jersey where a half-time position has been made a full-time one; and at the Delta Branch Experiment Station, Stoneville, Miss., where a full-time position is being set up for investigations in the control of grass weeds in cotton.

Branch Cotton Ginning Laboratory Dedicated in New Mexico

The new U.S. Cotton Ginning Branch Laboratory at Mesilla Park, N. Mex., dedicated Dec. 17, will be devoted to research dealing with the environmental and varietal conditions of cotton production that affect ginning processes in the Southwest.

A subsidiary of the U.S. Cotton Ginning Laboratory at Stoneville, Miss., the Mesilla Park branch will be concerned with changes in processes and equipment developed at Stoneville needed to make them more useful in the western part of the Cotton Belt.

Located adjacent to the campus of the New Mexico A. & M. College, the new laboratory will provide an "on-the-spot" testing ground for the application of many ginning research developments in the region. The equipment includes four different types of seed cotton cleaners, a government-type drier, a 2-stand gin with lint-flue cleaner, and a standard density press for baling.

The Cotton Branch of PMA has equipped a fiber testing laboratory where the effect of experimental changes in the ginning processes and equipment will be determined. There is also equipment for testing cottonseed.

Charles A. Bennett, resident engineer in charge of the laboratory at Stoneville since 1930, has been made director of all the Department's cotton ginning investigations and will supervise the work both at Stoneville and at Mesilla Park. Mr. Bennett began his career with the Department in 1926. He and his staff at Stoneville are credited with more than 20 public service patents covering devices now used by more than 3,000 ginners.

Victor L. Stedronsky has been assigned as engineer in immediate charge of the new laboratory. He entered government service in 1930 and first did research in cold storage and refrigeration but within a year was transferred to the cotton ginning studies at the Stoneville laboratory. His most recent assignment has been as project leader in research on extraction of foreign matter from cotton lint at gins.

Arvid J. Johnson, for several years principal statistical analyst for cotton ginning experiments conducted by the Department, has been assigned to provide similar services for both the Stoneville laboratory and the branch laboratory at Mesilla Park. He has served at Stoneville since 1932, first in fiber testing and surveying of commercial ginning equipment and later in planning and directing ginning tests and supervising the analyses of data and preparation of reports.

At Stoneville Charles M. Merkel, who has been agricultural engineer on basic studies, will have charge of all the engineering research on cotton ginning and associated processes. Widely known throughout the cotton industry, Merkel has been with the laboratory since 1945. He has assisted in program planning and he has also done extensive work as a consultant for ginners and planters.

Thomas E. Wright succeeds Merkel as leader of basic research on ginning at Stoneville. He will handle a large part of the advance design work. Mr. Wright joined the laboratory in 1948.

Research Expanded in Four Strategic Crops

On the recommendation of the U. S. Munitions Board, funds have been appropriated to expand Bureau research on four strategic crops. These are hard (leaf) fibers, castor beans, canaigre for tanning purposes, and guayule for rubber.

Objective of the research in hard fibers is to provide background information for the nucleus of an industry that can be rapidly expanded in case of an emergency. Dr. B. B. Robinson (C&OFC&D) is directing the investigations. Fibers under study are sanseveria, yucca, phorium, and possibly other leaf fibers that can be grown in warm parts of the United States.

The research on sanseveria--found to be a satisfactory substitute for the high quality cordage fiber, abaca--will be conducted in Florida. Investigations to determine the fiber content of wild species of yucca are being made in the Southwest, where this plant is indigenous. Tests on the adaptation of phorium--known as New England flax or New England hemp--will be made in the Gulf Coast region and on the West Coast from the Mexican border north into Oregon.

The investigations on castor beans and canaigre are under the direction of A. F. Sievers (TM&SC). In the first the object is to develop high yielding varieties adapted to specific regions and with growth habits that permit machine harvesting. The agricultural engineers are improving and modifying farm implements for planting, cultivating, and harvesting castor beans. Dr. Donald L. Van Horn was transferred in September from Beltsville to Stillwater, Okla., to direct this regional research project. The region covers the marginal cotton and corn belt of the Mississippi drainage with some work in the San Joaquin and Imperial Valleys of California.

Dr. L. M. Pultz, formerly head of the horticulture department of the University of Arizona, is in charge of the regional project on canaigre. His headquarters are at Tucson. Plantings are being made in Arizona, New Mexico, and Texas to determine adaptation, crop possibilities, and production costs. Agronomic practices under study include propagation, irrigation, harvesting, shredding, and drying. From the plantings will also come stock for expanded acreage when and if desired, and roots for large scale studies of extraction processes. The extraction work is being done by BAIC at the Eastern Research Laboratory in Philadelphia.

Investigations in guayule, begun during the war, are being continued under the direction of Dr. H. M. Tysdal in the Salinas Valley of California. Objectives are to develop improved strains of guayule through breeding and to maintain a stockpile of seed. The crop is now completely mechanized and may possibly become a small cash crop in the region. From interspecific crosses Dr. Tysdal has developed new lines with hybrid vigor. These breed true from seed. Experimental studies indicate increased yields of rubber up to 70 percent.

Storage for Plant Germ Plasm

The RMA national cooperative program for the introduction, testing, and maintenance of basic plant breeding stocks has spotlighted a need for special storage facilities to hold seed recognized as valuable germ plasm in future breeding work.

Regional storage facilities are now being set up under the project. One of these, in use at Ames, Iowa, serves the 12 States of the North Central region. Another, under construction at Glenn Dale, Md., will meet short term requirements of the 12 States in the Northeast and also of the project headquarters in the Division of Plant Exploration and Introduction.

Many breeders are pointing to the need for a much larger facility that will serve as a bank for germ plasm for the whole nation. It should be located preferably in the arid west where humidity can be controlled economically. A facility of this type would require a staff large enough to make continued checks on seed viability and to undertake investigations of optimum conditions for seed storage.

C. O. Erlanson (PEI), Dr. L. P. McCann(PEI), and Dr. K. S. Quisenberry (CC&D) have been named members of a Federal-State Committee to explore the possibility of establishing a national storage facility. Other members are: Dr. H. K. Hayes, St. Paul, Minn., who is serving as a chairman; Dr. M. M. Hoover, Ames, Iowa; Dr. Edwin James, Experiment, Ga.; and Dr. D. W. Robertson, Fort Collins, Colo. The committee has circulated a questionnaire to all State Experiment Stations and to crop divisions of this Bureau to get a consensus of opinion on various general questions involved.

Beasley Laboratory Dedicated in Texas

Dr. Thomas Kerr (C&OF&D) represented the Bureau at the dedication, Nov. 3, of a new cotton laboratory and greenhouse unit at the Texas Agricultural Experiment Station. The new building, which will be used for the study of cotton cytology and genetics, is named in honor of Dr. James O. Beasley, a former agent of this Bureau, who was killed in action during World War II.

Dr. Beasley is known for his pioneering research in doubling the chromosomes of cotton, particularly in species hybrids of that genus. This work proved the American cultivated cotton originated as a species hybrid, stabilized by doubling of the chromosomes. Dr. Beasley clarified the relation of the various species in *Gossypium* and his investigations have proved to be the foundation for much of the work now being done in cotton genetics.

A Texan, and a graduate of Texas A. & M. College, Beasley took his doctor's degree at Harvard under the late E. M. East. Dr. Beasley spent a year as agent for the Bureau in 1938-39. He was stationed at Raleigh, N. C. He returned to the Texas Station in 1939 and remained there until he joined the Army in 1942. He was killed in Italy in 1943.

Dr. P. V. Cardon, ARA, delivered the commemorative address at the dedication, which was held during the annual meeting of the Texas Station.

Exploratory Study Charts Soil Research for Belgian Congo

The applicability of American techniques for classifying and mapping potentially productive soils in tropical Africa is suggested in an exploratory study of soil groups in the Belgian Congo.

The study, written by Dr. Charles E. Kellogg and Miss Fidelia Davol (SS), is being published in Brussels. It is based on field work by Dr. Kellogg in the early summer of 1947 when, in the company of F. Jurion, now director general of the Institut National pour l'Etude Agronomique du Congo Belge, he examined selected sites representing important soil regions in the Congo. Laboratory studies of about 25 soil profiles were made at Plant Industry Station, mainly by Miss Davol.

On the basis of field studies and laboratory data on representative soil profiles, a tentative classification into great soil groups is set forth. Some of these are named for the first time. The term Latosol is used in place of Laterite for the zonal soils and the term laterite is restricted to characteristic material found in many tropical soils.

The tremendous task of mapping the tropical area--about one-third the size of the United States--will take many years. Mapping is prerequisite to the establishment of scientific farming that will make full use of machinery, fertilizers, chemicals, electric power, and irrigation.

It is suggested that:

- (1) The first approximation of a schematic soil association map of the region be compiled from existing data on the soils and the five genetic factors.
- (2) One or more representative sample areas of each soil association be mapped in full detail to meet all the requirements of a detailed soil survey.
- (3) A full set of predictions be developed for each local soil type and phase in each sample area with the aid of such research and analysis as can be marshalled.
- (4) The second approximation of the schematic soil association map of the whole region be made, along with full descriptions and sets of predictions for all local soil types and with keys for their identification within the soil associations shown on the map.
- (5) Additional areas can be progressively investigated and mapped in accordance with the urgency of the developing land programs.

This will provide agricultural advisors with detailed predictions to guide them and with keys for identifying soil types in the unsurveyed areas of their districts. At the same time, general appraisals of regional potentialities can be made from the map.

Objectives in Breeding Legumes

The chief objective of the legume breeding program should be to develop new strains and varieties that fit into the traditional agricultural pattern of profitable production, Dr. E. A. Hollowell told the American Society of Agronomy last month. In his opinion this would also expand the use of legumes in soil conservation.

Crops planted solely for soil building purposes are not popular with the American farmer. He prefers to replace row crops with others that can be used for cash and he favors legumes that can be used for feed before they are plowed under. While legumes add nitrogen and organic matter to the soil and may increase the availability of other plant nutrients, their use for feed often results in soil-depletion. They require large supplies of certain minerals. This problem can be met in part, Dr. Hollowell says, by giving greater emphasis to the phosphorus, calcium, and potassium requirements of different genera, species, and even varieties of legumes developed in the breeding program.

Surveying the needs and recent promising developments in breeding, Dr. Hollowell says that one of the most urgent needs is for a palatable perennial legume for dry lands. Ideally, he says, this should be one that can be rapidly established, that will make a rapid early spring growth and store required reserve food when water supplies are most abundant. It would remain dormant during the summer when transpiration rates are greatest.

Introduction of new genera, species, and varieties continues to offer a valuable approach to solving the problem. Dr. Hollowell believes, however, that the greatest hope lies in improving present species through research and in making use of native and less important exotic species. He suggests, for example, that legume breeders consider possibilities of species such as Trifolium dacyphyllum, most commonly found at high altitudes in the Rockies.

Diplodia Control Improves Budding Success

Last year, Dr. August M. Gorenz (RPI), collaborating with technicians of the Mexican Department of Agriculture at the El Palmar Experiment Station, found that attacks of the fungus Diplodia theobromae on newly inserted Heavea bud patches were the basic cause of disastrously low top-budding results. Subsequent tests showed that Diplodia could be controlled by treating shoots, budwood, and tapes with fungicides. Formate has proved especially beneficial and has been adopted for standard use. As a result top-budding success has been greatly increased.

Experiments to test the efficacy of reducing the Diplodia inoculum in nurseries by spraying with fungicides that are effective against both Diplodia and South American Leaf blight (Dothidella ulei) are now planned. The copper fungicides commonly used to control blight appear to be ineffective against Diplodia.

DECEMBER 1949

Response of Tung Trees to Fertilizer Treatments

New light on the response of tung trees to fertilizer comes from a long term experiment in a bearing orchard at Bush, La. In this study three levels of nitrogen, phosphorus, and potassium have been applied annually on Ora sandy loam since 1943.

Dr. B. G. Sitton (F&VC&D) reports that the first significant response was to nitrogen. An annual application of 0.16 pound actual nitrogen for each year of tree age has more than doubled average nut production since 1944. This is in comparison with yields from trees receiving only the nitrogen supplied by soil and cover crops.

By 1946 a very significant interaction between nitrogen and phosphorus became apparent. Additions of phosphorus above the minimum required for the cover crop did not improve production of trees at the low level of nitrogen but affected a substantial yield increase at the high nitrogen level.

The response to potassium came later. Tung fruit contains about 30 pounds of K_2O per ton and the high yield of fruit at the high nitrogen level created a potassium requirement far above the supplying capacity of the soil. In high yielding trees that received no supplemental potassium, the potassium content of the leaves declined steadily from about 0.85 percent in 1943 to 0.34 percent in 1948. This was accompanied by a decline in the oil content of the fruit and hence in its market value. The application of $3/4$ pound of K_2O for each pound of nitrogen prevented this decline. Data from analysis of leaf samples taken in 1948 suggest further that the reduced uptake of potassium may be attributed in part to the calcium in the superphosphate. Currently foliage is best and fruit maturity is satisfactory in the plots with high nitrogen, high potassium, and moderate superphosphate.

Relation of Tung Tree Form to Storm Damage

The desirability of training tung trees to a strong central leader type is emphasized by orchard studies of breakage. Following the hurricane of August 27, 1949, in the vicinity of Gainesville, Fla., Dr. Felix S. Lagasse found that trees trained to a vase shape suffered the greatest damage, those with a single trunk and having a weak leader or none at all (the "cartwheel" type) suffered the next greatest damage. Trees trained to a single trunk with a strong central leader and well distributed branches withstood the storm with little damage.

These findings agree with those previously reported by Samuel Merrill of the Bogalusa, La., laboratory after the 1947 hurricane. They indicate pruning practices that will lessen immediate storm damage and tend to increase longevity of tung orchards.

Engineers Develop Fertilizer Testing Distributor

An experimental fertilizer hopper in which the three elements of a complete fertilizer can be mixed and dispensed to soil tools has been developed by agricultural engineers of the Farm Machinery Division in cooperation with the Texas Agricultural Experiment Station.

The equipment can be used for preplanting applications, for side-dressing established crops, and for planting and fertilizing simultaneously. It facilitates the application of a wide range of rates and ratios of fertilizer including radioactive phosphorus.

Built in the Agricultural Engineering laboratory at the Research Center, the equipment consists of two belt-type hoppers, each with two three-compartment units. The six compartments per hopper that constitute the fertilizer tray are bottomless. A rubberized belt forms a common false bottom to all compartments in a single tray. In operation the tray is driven forward mechanically until its complete length has passed over the fertilizer funnels. As the tray goes forward the belt is pulled around a roller, so that the compartments immediately start discharging their materials through the fertilizer funnels.

It is unnecessary to premix the fertilizer as the six compartments in each tray are loaded in sets of threes with a separate compartment in each set for nitrogen, phosphorus, and potassium materials. Suitable measuring cans make it also unnecessary to weigh the fertilizer. Certain compartments are left empty when an incomplete fertilizer is to be tested. A common plastic lid over the two middle compartments permits these to be used for radioactive phosphorus. The lid reduces the dust hazard and stops radiation of harmful rays.

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ON THE CALENDAR

Jan. 3-5 Northeastern Weed Control Conference, New York, N. Y.
Feb. 8-11 Southern Section American Society for Horticultural Science
and Southern Agricultural Workers, Biloxi, Miss.

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Plant Disease Reporter in New Dress

A change in processing from mimeographing to multilithing is announced for the Plant Disease Reporter, beginning with the January issue. Designed to increase readability and to improve the appearance of this monthly publication, the new plan will also permit use of more pictures and drawings.

Dr. Paul Miller (M&DS), who directs publications of the Reporter, requests that contributors plan text, tables, and illustrations, including footnotes, titles and legends, to fit page space 6 inches by 8 3/4 inches. Maps, charts, and graphs must be clearly drawn with black ink. Clear glossy photographs can be used.

Deadline for copy in the Reporter is the 18th of the month preceding the date of issue, which is the 15th of each month.

Improved Devices Come Out of Cooperative Vegetable Seed Studies

Much interest has been shown in the past two years in a small thresher and deck reducer developed by Leslie R. Hawthorn (F&VC&D) and L. H. Pollard, R. P. Draper, and others of the Utah Agricultural Experiment Station, incidental to cooperative work on vegetable seed production.

The thresher for handling experimental lots of virtually any kind of seed crop duplicates commercial threshing on a small scale. It is described by Mr. Hawthorn in Seed World for February 7, 1948.

The reducer is a simple device that makes it possible to clean seed samples of only a few ounces upon the deck of a standard commercial-size gravity separator. Normally these function effectively only when large amounts of seed are used and leave a considerable amount of uncleaned seed at the end of the run. The deck reducer, which is described in an article in Seed World for September 19, 1949, permits cleaning the last remnants of any large lot as well as individual handling of small lots.

Detailed plans and specifications can be obtained by writing to Mr. Hawthorn or Dr. Pollard, Department of Vegetable Crops, Agricultural Experiment Station, Logan, Utah.

South African Grass Doing Well in Florida

Pangola grass, a rapidly growing perennial introduced from South Africa in 1936 and first released to Florida farmers in 1942, continues to show promise in that State, reports M. A. Hein (FC&D).

Lake County now has some 12,000 acres in this grass. The rapidity with which it has been established is shown by the fact that between 8,000 and 10,000 acres of the plantings have come from one acre of plant material received by the county agent in 1944.

The grass is planted on native land that has been cultivated with large field choppers and treated with about 500 pounds of basic slag per acre. When spread over the land, the grass is disked into the soil. Florida growers find that by planting Pangola grass in strips they can have their cake and eat it too because this practice permits cattle to graze on native grasses that come up after the soil is disturbed. In turn, grazing prevents competition between the native grasses and Pangola.

Ramsey Studies Market Diseases of Bananas

Dr. G. B. Ramsey, in charge of the Chicago laboratory for investigations in handling, transportation, and storage of fruit and vegetable crops, sailed November 17 for Central America where he is spending six weeks studying field and transportation factors in market diseases of bananas.

The study, made at the request of the Fruit Dispatch Company, will take Dr. Ramsey to Costa Rica, Panama, Honduras, and Guatemala.

Rabbiteye Blueberries Under Test at Tifton

A progress report on research to improve rabbiteye blueberries for cultivation in the Gulf Coast region notes that hybrids under test at Tifton, Ga., have the desirable quality of early maturity, a small, dry stem-scar, and fairly good flavor. The fruits are still small and dark colored, and most of the plants lack vigor. The hybrids come from crosses made at Beltsville in 1941 when rabbiteye blueberries and the Constable's blueberry, native to the highlands of western North Carolina, were used as parent material. The highland berry has large fruits with tender skin and flesh, good flavor, and earliness.

Dr. George M. Darrow (F&VC&D) and W. T. Brightwell and O. J. Woodard of the Georgia Coastal Plain Experiment Station are making further crosses and back-crosses to superior selections of both species to obtain berries with improved flavor, size, and color.

Boric Acid Sprays Increase Fruit Set of Anjou Pears

In the Northwest Anjou pears bloom heavily but characteristically set relatively light crops. L. P. Batjer and A. H. Thompson (F&VC&D) report they have increased the set of fruit on individual limbs in two orchards near Wenatchee, Wash., by spraying the bloom with a solution of boric acid carrying 125 p. p. m. of boron.

This suggests three possibilities, which may be more or less interrelated: (a) Stimulation of pollen germination and pollen tube growth; (b) stimulatory effect of the boron on formation of plant growth regulators during and immediately following the bloom period; (c) Correction of an incipient or temporary deficiency of boron.

More extensive work is in progress to determine various aspects of response to boric acid sprays on a wide range of fruit species, varieties, and conditions in the Northwest.

Alfalfa Bulletin Reflects Research Advances

Evidence that alfalfa, with its snail-shaped seed pods, is making rapid strides can be seen in production gains in alfalfa hay, which has increased 50 percent in the past 10 years. The most recent revision of Farmers' Bulletin 1722, "Growing Alfalfa" highlights these gains as follows:

- (1) New varieties including Ranger, Buffalo, Atlantic, Williamsburg, Narragansett, Nemiston, African, and Indian.
- (2) New practice in inoculation, favoring the use of commercial cultures.
- (3) Advances in insect control with emphasis on the use of various new chemicals for grasshopper control, less emphasis on poison bait, although better baits with the new poison are described.

The bulletin was written by the late H. L. Westover. The revision was prepared by Dr. H. M. Tysdal, Now of RPI.

Fiber Specialist Reports on Mission to Bolivia

Dr. B. B. Robinson (C&OFC&D) has returned from a special assignment with the Pan American Union to give technical assistance to the Bolivian government in planning a program of fiber production. Dr. Robinson says Bolivia is potentially able to produce many of the agricultural commodities she now imports but first her highways must be completed. His survey indicates the biggest immediate developments will be in the Department of Santa Cruz, where highway construction is expected to open up the region within the next 2 to 5 years. He believes both cotton and kenaf can be produced economically in this region.

NOTES ON PERSONNEL

Tharp Transfers to Beltsville

Dr. W. Hardy Tharp (C&OFC&D), located at the University of Arkansas in Fayetteville since 1936, will transfer to Plant Industry Station, January 1, to assume charge of physiological investigations relating to cotton. He will continue to serve as coordinator for regional research in cotton defoliation.

During the past 13 years, Dr. Tharp has conducted cooperative studies in cotton. These have included the physiology of fusarium wilt resistance and nutrition, effectiveness of environment and variety on composition of cotton seed. He has directed regional research in cotton defoliation since 1946. Prior to joining the Cotton Division he assisted in studies of Dutch Elm disease in the Division of Forest Pathology. He is a graduate of Montana State College and holds the MS and Ph.D. degrees from the University of Wisconsin.

RETIREMENTS

Henry E. Allanson, assistant chief of the Bureau, retired November 30, bringing to a close 35 years of service, most of which has been in the administration of government research.

A native of Iowa, Mr. Allanson began his government career in 1911 as a clerk-stenographer in the office of Dr. B. T. Galloway, then Assistant Secretary of Agriculture. Mr. Allanson interrupted his work to take a degree at Cornell. On graduation he returned to this Bureau as scientific assistant. His keen abilities in administration, however, soon brought his transfer to the staff of the Chief of the Bureau. For the past quarter of a century, he has directed budget, fiscal, and personnel affairs and has assisted in general administration of the Bureau.

He has seen tremendous changes in government administration and has had a hand in shaping these changes. He has also seen the research of this Bureau expand in size and increase in complexity and importance. Much of this research is now carried on cooperatively with the State Experiment Stations. Mr. Allanson simplified the memorandum of understanding, a working pact between the Bureau and the States, which has had a great deal to do with the smooth operation of the joint relationship. Mr. Allanson, whose scientific training has been largely used to facilitate research by other workers, plans to do plant research on his retirement. He and Mrs. Allanson will make their home at Scientists' Cliff, Port Republic, Md.

William J. Morse (FC&D), internationally known for his work with soybeans and the development of the crop in the United States, retired November 30, after 42 years of service.

A native of Lowville, N. Y. and a graduate of Cornell University, he came to the Bureau in 1907 just as plans were being developed to carry on research in soybean production. The plant, introduced at various times from China, Manchuria, Korea, and Japan, and other parts of Asia, had been known in this country for a century but only a few thousand bushels a year were grown here. Mr. Morse's research had led to the development of productive crop valued for food, feed, and industrial purposes, listed on the grain exchanges, and now grown to the extent of 200 million bushels a year.

Mr. Morse went to the Orient in 1929 and spent two years exploring for soybean breeding material and searching for lore on farming practices. He returned with hundreds of varieties. These have served plant breeders in the Department and State Experiment Stations with source material from which they have originated varieties adapted to many locations and to practically every need.

In 1947 the Department gave Mr. Morse a superior service award. That same year the American Soybean Association, of which he was three times president, made him an honorary life member.

Mr. Morse and his wife live at 6809 Fifth Street, N. W. (Takoma Park), Washington, D. C.

Samuel B. Nuckols (SPI), in charge of sugar beet investigations at Scottsbluff, Nebra., retired September 30, after 35 years of service.

Born in Savannah, Mo. in 1887, Mr. Nuckols received the BS and MS degrees from the University of Missouri. He taught at the University of West Virginia and the Colorado Agricultural College before joining the Department of Agriculture in 1914.

From Mr. Nuckols' research came the discovery that the planting date for sugar beets in the important Great Plains region could be advanced two weeks to a month. By allowing better moisture conditions for germination without too much frost hazard, this earlier planting date results in bigger beets with higher sugar content. He demonstrated that frequent light applications of irrigation water--using 40 percent less water--produced practically as large a sugar beet crop as did larger amounts of water commonly used. Mr. Nuckols' finding that stem color of the seedling can be predicted by noting the bud color of the mother root has been useful to sugar beet breeders in identifying the hybrids when plants of different bud colors are crossed.

Mr. Nuckols plans to continue in the North Platte Valley where he is managing a large farm. He and his wife make their home at Scottsboro.

DEATHS

Dr. George Bartholomew Sartoris, principal agronomist (SPI) died at his home in University Park, Md., November 19. He was 53.

During his 26 years of service in the Bureau, Dr. Sartoris won international honors for improving disease resistance and productivity of sugar cane varieties. Many of the sugar cane varieties now grown in Louisiana and Florida for the production of syrup are attributed to his work.

Dr. Sartoris was born in Marshfield, Oreg., and was a graduate of the University of Washington. He received his master's degree in science there in 1921. He then studied mycology and plant pathology at the University of Michigan where he received his Ph.D. in 1923. He was a veteran of World War I. He joined the Bureau on graduation from the University of Michigan. Later he was in charge of the Sugar Plant Field Station at Canal Point, Fla.

Dr. Sartoris was a fellow of the American Society for the Advancement of Science.

He leaves his widow, Mrs. Eileen Terry Sartoris, and two daughters, Mrs. Nicky O'Hair, Jacksonville, Fla., and Gail Sartoris, at home.

Thomas A. Huntington Miller, who retired in 1945 after 37 years of government service, died in Charlottesville, Va., November 2. He was 64.

A native of North Carolina, Mr. Miller received a bachelor's degree in civil engineering from Virginia Polytechnic Institute in 1906. After several years of construction work for the U. S. Naval Academy, he transferred in 1917 to the Bureau of Public Roads, then in the Department of Agriculture.

Mr. Miller was instrumental in establishing the Farm Building Plan Exchange Service, a cooperative program with the State experiment stations, now in its twenty-first year. He was one of the designers of buildings on the Arlington Experimental Farm and of many of the buildings at the Research Center at Beltsville.

Beginning in 1941, Mr. Miller served for a period as acting chief of the Division of Structures in the Bureau of Agricultural Chemistry and Engineering, now the Division of Farm Buildings and Rural Housing of this Bureau. Since his retirement, Mr. Miller has served as a collaborator.

He leaves his widow, four sons, and a daughter, of the home, Wake Robin, Widewater, Va.

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PUBLICATIONS

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Recent Bureau Press Releases

Copies of the following releases may be obtained from Press Service, Office of Information, U. S. Department of Agriculture, Washington 25, D. C.

Date	Subject
November 1	Dr. R. O. E. Davis, Fertilizer Expert, Dies
13	New hybrid Buffalo Grasses Give High Forage yields
14	Research Finds Way to Control Lygus Bug, Increase Alfalfa Seed Yields
14	Naming-Numbering System Devised for Improved Flue-Cured Tobacco
14	Prepackaging Citrus Holds Problems for Shipper
15	Types of Artificial Shades Studied for Keeping Cattle Cool
17	Pentzer Heads Research on Handling Fruit and Vegetable Crops
17	San Nuckols, Platte Valley Sugar-Beet Scientist, Retires
17	New Methods Developed for Salvage of Diseased Ponderosa Pine
20	Sagebrush Under Control
23	W. J. Morse, Soybean Builder, Retires from USDA after 42 Years
23	Scientists Tell How to Prevent Rot of Outside Woodwork on Buildings
27	Resistant Plants Sometimes Arrive Before the Disease
30	Henry E. Allanson Retires from Agriculture

Departmental

Plant Inventory # 135 for April-June 1938 Introductions

Outside Publications

Alben, A. O. The pecan variety situation in Louisiana. Southeastern Pecan Growers Association Proceedings, 1949.

Alben, A. O. Rehabilitating a 42-year-old orchard on Yaholla loam soil. Texas Pecan Growers Association Proceedings, 1949.

Anderson, Elna, and Martin, John H. World production and consumption of millet sorghum. Econ. Bot. July-Sept. 1949.

Andrus, C. F. Congo, King of the Melons, Southern Seedsman, November, 1949.

Coffman, Frank A. A first aid to plant hybridists. Jour. Hered., September, 1949.

Combs, John B., and Zuber, M. S. Further use of punched card equipment in predicting the performances of double-crossed corn hybrids. Agron. Jour., October, 1949.

- Frey, Kenneth J., Brimhall, B., and Sprague, G. F. The effects of selection upon protein quality in the corn kernel. *Agron. Jour.*, September 1949.
- Hawthorn, L. R., Pollard, L. H., and Draper, R. P. A deck reducer for the gravity separator. *Seed World*, September 16, 1949.
- Hruschka, H. W., and Kaufman, J. The storage of Prepackaged cranberries. *Pre-Pack-Age*, October 1949.
- Leukel, R. W. Cooperative tests of seed treatments on spring grains in 1949. October 15, 1949. (Processed.)
- Marsh, P. B. and K. Bollenbacher. The Fungi Concerned in Fiber Deterioration I. Their occurrence. *Textile Research Journal*, June 1949.
- Marsh, P. B., K. Bollenbacher, M. L. Butler, and K. B. Raper. The Fungi Concerned in Fiber Deterioration II. Their ability to decompose cellulose. *Textile Research Journal*, August 1949.
- Martin, John H., and Leonard, Warren H. Principles of field crop production. The Macmillan Company, pp. 1176. New York, 1949.
- McKinney, H. H. and Fulton, Robert W. Local susceptibility of cotyledons and leaves of cucumber to tobacco mosaic virus. *Phytopathology*, October 1949.
- Moore, W. D. Flooding as a means of destroying the sclerotia of *Sclerotinia sclerotiorum*. *Phytopathology*, November 1949.
- Murphy, H. C., and Burnett, L. C. A new oat--it's Shelby. *Iowa Farm Sci.*, October 1949.
- Norton, R. A., and R. E. Larson, with V. H. Johnson, A Regional Program for Testing Weed-control Equipment, in *Agricultural Engineering*, November 1949.
- Painter, J. H. Preliminary remarks on walnut shrivel. *Oregon State Hort. Soc. Proceedings*, 1949.
- Parker, M. W., and Borthwick, H. A. Growth and composition of Biloxi soybean grown in a controlled environment with radiation from different carbon-arc sources. *Plant Physiology*, July 1949.
- Schomer, H. A., Lieberman, Morris, Hruschka, H. W., Showalter, R. K., and Halsey, L. H. Prepackaging sweet corn at production area in Florida, 1948. *Pre-Pack-Age*, October 1949.

Suneson, C. A. Survival of four barley varieties in a mixture.
Agron. Jour. October 1949.

Tanner, Fred W., Jr., Swanson, A. F., and Curtis, J. J. Breeding for niacin content in a sorghum cross, Westland x Cody. Cereal Chem. July 1949.

Woodward, R. W. Sterility in Velvon barley and its relationship to yield, kernel weight, and date and rate of seeding. Agron. Jour. September 1949.

